

Work Order ID 157965

Monday, March 06, 2017 1:53:20 PM

157965

Page 1

Item ID: D4884-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: End Fitting, Eye
Start Date: 3/10/2017 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 4/5/2017 Req'd Qty: 12.00 ***12*** Customer:
Reference: SCHEDULED

Approvals: Process Plan: DAS 21 3-89 Date: **MAR 06 2017** Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4884	REV A								

105

0.49

105

Doosan

Memo

0.25

Doosan Lathe

-Machine blank as per Machinist's turning detail, folio+drawing D4884-1.

12 ϕ 17-03-19

115

0.08

115

HAAS 5AXIS

Memo

0.49

HAAS CNC vertical machine #5

Mill as per folio FB509.

Dwg. rev: AFolio rev: AA

B.O 17-03-26

12 ϕ DAS 08 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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240 47 200								Lead hand / Supervisor Approval Verification																																																									
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 157965

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157965

Page 3

Item ID: D4884-1 Accept ***N900040100*** Setup Start ***NS1***
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Item Name: End Fitting, Eye
Start Date: 3/10/2017 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 4/5/2017 Req'd Qty: 12.00 ***12*** Customer:
Reference: SCHEDULED

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Receive & Inspect for Damage & Mat'l Certs	0.00							
140									
Packaging	Memo	0.04							
Packaging									
150	QC5- Inspect part completeness to step on W/O	0.00							
150									
QC	Memo	0.04							
Quality Control									
160	Identify as per dwg & Stock Location: <u>ST134</u>	0.00							
160									
Packaging	Memo	0.02							
Packaging	IDENTIFY AS PER QSI 044 6.1								

12 X SP17-0330

DAS 38 9-89

12

MAR 30 2017

DAS 6 9-89

12

DAS 41 9-89

MAR 30 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
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				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 157965

Monday, March 06, 2017 1:53:20 PM

157965

Page 4

Item ID: D4884-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: End Fitting, Eye

Start Date: 3/10/2017 Start Qty: 12.00

12

Cust Item ID:

Required Date: 4/5/2017 Req'd Qty: 12.00

12

Customer:

Reference: SCHEDULED

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC21- Final Inspection - Work Order Release

0.00

170

QC

Memo

0.20

Quality Control

DAS
21
9-89

MAR 31 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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OTHER : _____					

Picklist Print

Monday, March 06, 2017 1:53:23 PM

Page 1

Work Order ID: 157965

157965

Parent Item: D4884-1

D4884-1

Parent Item Name: End Fitting, Eye

Start Date: 3/10/2017

Required Date: 4/5/2017

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 14-01-13 JLM VERIFIED BY:DD
IPP REV:B DOING PART IN HOUSE FROM NOW ON. RQ 16.11.02
VERIFIED BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M174PH-H900R1.500		Purchased	No			105	f	76.2250	0.35	4.421053			
-------------------	--	-----------	----	--	--	-----	---	---------	------	----------	--	--	--

M174PH-H900R1 500

17-4SS H900 ROUND BAR 1.500

Location

Loc Qty

Loc Code

MAT031

76.225

M128809

6.875

M129892

69.35

2.79
2.33

19-03-19

26" = 892

14 1/2
19" = 809

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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OTHER : _____					

DART AEROSPACE LTD		Work Order: 157965
Description: End Fitting, Eye		Part Number: D4884-1
Inspection Dwg: D4884 Rev: A		Page 1 of 1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.500	+0.006/-0.001	.501	✓		Vern LPOF	
1.17	+/-0.030	1.145	✓			
R0.63	+/-0.030	.63	✓			
0.500	+/-0.005	.499	✓			
0.030	+/-0.010	.025	✓			
0.017	+/-0.010	.010	✓			
Ø0.670	+0.000/-0.001	.6695	✓		Mic LPOF	
30°	+/-0.5°	30°	✓		Vern LPOF	
Ø0.125	+0.004/-0.001	.125	✓			
30°	+/-0.5°	30°	✓			
Ø0.125	+0.004/-0.001	.125	✓			
Ø1.14	+/-0.030	1.140	✓			
1.132	+/-0.010	1.133	✓		Vern	GA-13
Ø0.750	+0.000/-0.001	0.7496	✓		Mic / T-6	GA-03 / ref.
0.66	+/-0.030	0.661	✓		H-6	31006
2.060	+/-0.005	2.061	✓		"	"
R0.25	+/-0.030	R0.250	✓		R-6	ref.
1.81	+/-0.030	1.811	✓		H-6	31006
3.65	+/-0.030	3.656	✓		"	"
0.06 x 45°	+/-0.030 x +/-0.5°	0.065 x 45°	✓		Vern	GA-13
0.947	+/-0.010	0.946	✓		"	"
0.059	+/-0.010	0.053	✓		"	"
0.063	+/-0.010	0.065	✓		Mic	GA-03
R0.06	+/-0.030	R0.063	✓		R-6	ref.
0.200	+/-0.010	0.202	✓		Vern	GA-B
R0.25	+/-0.030	R0.250	✓		R-6	ref.
1.39	+/-0.030	1.397	✓		H-6	31006

Measured by: 17-03-19/17-03-26	Checked by: 14 9-89	QC Inspector:
Date: 17-03-26	Date: 17/03/29	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
A	17.01.31	New Issue	KJ	

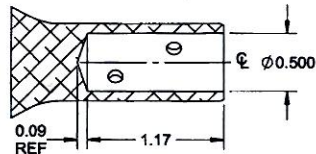
DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

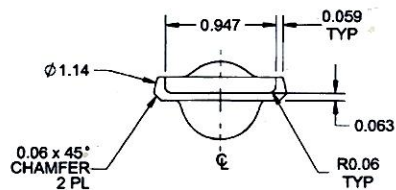
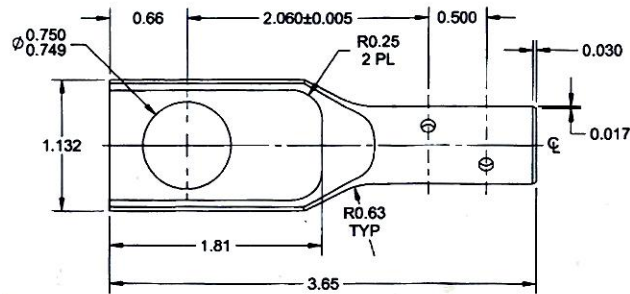
QA Closed: _____ Date: _____

Work Order update only ☐

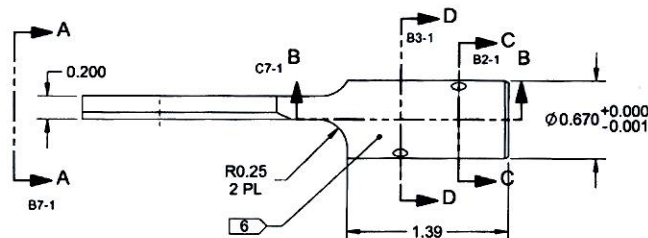
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OTHER : _____									



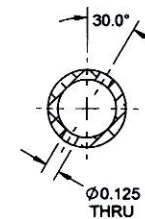
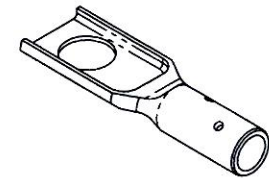
SECTION B-B CS-1



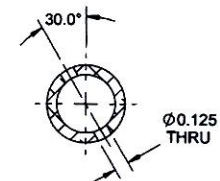
VIEW A-A B6-1



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 157965 *MLJ*
1703-86



SECTION C-C C4-1



SECTION D-D C5-1

D4884-1 END FITTING, EYE

NOTES:

- 1) MATERIAL: 17-4 PH/S17400/TYPE 630 SS ROUND BAR, H900 CONDITION
 PER AMS 5643/ASTM A564
 DART SPEC M17-4-R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.13 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

A NEW ISSUE		RF	13.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	DC		
MFG. APPR.	JLM		
APPROVED	HS		
DE APPR.	DS		
DATE	13.12.01		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4884	REV. A SHEET 1 OF 2
TITLE END FITTING	SCALE NTS

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 WRITTEN PERMISSION FROM DART AEROSPACE LTD.

2013-12-12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35787**

Purchase Order Date 3/30/2017

PO Print Date 3/30/2017

Page Number 1 of 3

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone

Ship Via: Delivered

Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	71401-45	PROCUREMENT QUALITY CLAUSES	3/30/2017 No 3/30/2017		1.00	\$0.00	\$0.00
	Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A024 process certifications A026 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents						

Line Total: \$0.00

2	157965	D4884-1 END FITTING	3/30/2017 Yes 3/30/2017		12.00	\$13.92	\$167.00
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LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

DAS
38
9-89

SP17-B 30

Note:

3/30/2017

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO31578	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO35787
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON THE FOLLOWING 18 END FITTINGS:

ITEMS ID# D4884-1 END FITTINGS WORK ORDER# 158183 (6 ea)
ITEMS ID# D4884-1 END FITTINGS WORK ORDER# 157965 (12 ea)

817-0331

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE AS PER ASTM1417 M-13						30 MAR 2017	
NO CRACK FOUND							
PEN.(ZL-56, MPO13600), DEV.(SKD-S2, MPO11715), CLEANER(SKC-S, MPO13923)							
<i>Description</i>	<i>Location</i>	<i>P/N</i>	<i>Qty</i>	<i>Batch</i>	<i>S/N Off</i>	<i>S/N On</i>	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp 	Date: 30 MAR 2017
Name: CHRISTIAN BRIEN		